REMARKS

By way of this Amendment, claims 1, 9, and 16 have been amended. Accordingly, claims 1-20 remain present in this application. Applicants respectfully request reconsideration and allowance of the present application.

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned "Version with Markings to Show Changes Made."

In the present Office Action, claims 1-3, 5, 6, 9-12, 14-18, and 20 were rejected under 35 U.S.C. §102(b) as being anticipated by Hanger, Jr. (U.S. Patent No. 1,083,399). Applicants have amended claims 1, 9, and 16 to clarify that the claimed steering system is a steer-by-wire steering system in which the steering input shaft is not mechanically linked to the steered wheel(s), and respectfully traverse this rejection for the reasons presented below.

The reference to Hanger, Jr. discloses a mechanically linked steering mechanism for a vehicle having a steering wheel (1) secured at the upper end of a rotatable steering post (2). The steering post (2) in Hanger, Jr. has a worm gear (11) mechanically engaging teeth of arm (11a) of a sector connected to a mechanism for steering wheels of the vehicle. Thus, the steering post (2) in Hanger, Jr. is mechanically linked to the steered wheels of the vehicle via arm (11a) and worm gear (11).

In contrast, Applicants' claimed invention, as set forth in claim 1, as amended, recites a steer-by-wire steering system for steering one or more road wheels on a vehicle. Applicants steer-by-wire steering system comprises a steering input device rotatable by an operator to command steering of the one or more road wheels, and a steering input shaft mechanically

connected to the steering input device and rotatable in response to rotation of the steering input device. In Applicants' steer-by-wire steering system, the steering input shaft is not mechanically linked to the steered one or more road wheels. Additionally, the system includes a support member disposed proximate to the steering input shaft, a male member provided on one of the steering input shaft and the support member, and a female receptacle provided on the other of the steering input shaft and the support member for receiving the male member. The female receptacle includes at least one stop position for limiting rotational travel of the steering input shaft. The claimed steering system further includes an actuator for rotating one or more wheels in the vehicle in response to rotation of the steering input device.

Nowhere does Hanger, Jr. disclose a steer-by-wire steering system in which the steering input shaft is not mechanically linked to the steered one or more road wheels, and having a male member and female receptacle provided in the steering input shaft and a support member, with the female receptacle having at least one stop position for limiting rotational travel of the steering input shaft. Instead, the Hanger, Jr. steering system is a mechanically linked system in which the steering post (shaft) 2 is mechanically linked to the steered wheels of the vehicle. Applicants' claimed invention employs a male member and female receptacle for providing at least one stop position for limiting rotational travel of the steering input shaft for a steer-by-wire steering system. Accordingly, the steer-by-wire steering system, which conventionally does not have end of travel rotational limiters associated with the steering input shaft, is provided with a stop mechanism to limit travel of the steering input shaft. Claims 9 and 16 likewise include the same or similar above-discussed features of claim 1, which are not disclosed in the Hanger, Jr. reference.

Accordingly, Hanger, Jr. does not teach each and every aspect of the claimed invention, and thus does not anticipate the claimed invention. Applicants therefore respectfully request withdrawal of the rejection of claims 1-3, 5, 6, 9-12, 14-18, and 20 under 35 U.S.C. §102(b).

The Examiner has indicated that claims 4, 7, 8, 13, and 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Applicants appreciate the Examiner's acknowledgement of allowable subject matter; however, Applicants are of the position that independent claims 1, 9, and 16, as amended, are now in condition for allowance, which action is respectfully solicited.

In view of the amendments and the above remarks, it is submitted that claims 1-20, as amended, define patentable subject matter and are in condition for allowance, which action is respectfully solicited. If the Examiner has any questions regarding patentability of these claims, the Examiner is encouraged to contact Applicants' undersigned attorney to discuss the same.

Respectfully submitted,

AARON L. MILLS ET AL.

By: Price, Heneveld, Cooper, DeWitt & Litton

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Date

Kevin T. Grzelak

Kevin T. Grzelak
Registration No. 35 169
695 Kenmoor, S.E.
Post Office Box 2567
Grand Rapids, Michigan 49501
(616) 949-9610

KTG/jrb/clc

VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Claims:

Please amend claims 1, 9, and 16 as follows:

1. (amended) A steer-by-wire steering system for steering one or more road wheels on a vehicle, said steering system comprising:

a steering input device rotatable by an operator to command steering of the one or more road wheels;

a steering input shaft mechanically connected to the steering input device and rotatable in response to rotation of the steering input device, wherein the steering input shaft is not mechanically linked to the steered one or more road wheels;

a support member disposed proximate the steering input shaft;

a male member provided on one of the steering input shaft and the support member;

a female receptacle provided on the other of the steering input shaft and the support member for receiving the male member, wherein the female receptacle comprises at least one stop position for limiting rotational travel of the steering input shaft; and

an actuator for rotating one or more wheels in the vehicle in response to rotation of the steering input device.

9. (amended) A steer-by-wire steering system for steering one or more steerable members on a steered vehicle, said steering system comprising:

a steering input device rotatable by an operator to command steering of the one or more steerable members;

a steering input shaft mechanically connected to the steering input device and rotatable in response to rotation of the steering input device, wherein the steering input shaft is not mechanically linked to the steered one or more steerable members;

a support member disposed proximate the steering input shaft;

a male member provided on one of the steering input shaft and the support member;

a female receptacle provided on the other of the steering input shaft and the support member for receiving the male member, wherein the female receptacle comprises at least one stop position for limiting rotational travel of the steering input shaft; and

an actuator for actuating one or more steerable members in the vehicle in response to rotation of the steering input device.

16. (amended) A steering assembly for a steer-by-wire steering system for steering one or more road wheels of a vehicle, said steering assembly comprising:

a steering input device rotatable by an operator to command steering of one or more road wheels of the vehicle;

a steering input shaft mechanically connected to the steering input device and rotatable in response to rotation of the steering input device, wherein the steering input shaft is not mechanically linked to the steered one or more road wheels;

a support member disposed proximate the steering input shaft;

a male member provided on one of the steering input shaft and the support member; and

a female receptacle provided on the other of the steering input shaft and the support member for receiving the male member, wherein the female receptacle comprises at least one stop position for limiting rotational travel of the steering input shaft.